IN THE CLAIMS:

1. (currently amended) A method for transmitting data as a number of segments in separate packets, each packet including a sequence number field, the method comprising:

generating a sequence number that includes a plurality of portions, with at least one portion of the sequence number identifying a particular segment of the data within a file, the at least one portion of the sequence number being based on predictable processing performed by the receiving device and the other portions of the sequence number being generated in accordance with a specification of a relevant transmission protocol;

transmitting to a receiving device a data packet including the particular segment of the data and the associated sequence number;

receiving a corresponding ~~an associated~~ acknowledgement packet from the receiving device, the acknowledgement packet including an acknowledgment sequence number that is based on the predictable processing of the sequence number in the transmitted packet; and

determining ~~a~~ an offset that corresponds to the next segment of the data within the file to transmit based on one or more portions of the received acknowledgment sequence number that correspond to the at least one portion of the associated sequence number.

2. (previously amended) The method of claim 1, wherein the at least one portion of the acknowledgement sequence number includes an incremented version of the at least one portion of the sequence number transmitted to the receiving device and the determining step further includes identifying the next segment to transmit based on the incremented version.

3. (previously amended) The method of claim 1, wherein the transmitting step includes transmitting the data packet using transmission control protocol/Internet protocol (TCP/IP).

4. (previously amended) The method of claim 1, further comprising:

repeating the transmitting, receiving and determining steps for additional segments of the data until all the segments of the data have been transmitted.

5. (previously amended) The method of claim 1, wherein the transmitting step includes transmitting the data packet without storing information identifying the segment being transmitted to the receiving device.

6. (previously amended) The method of claim 1, wherein the plurality of portions includes a least significant portion, wherein the partitioning step includes setting the length of the least significant portion based on the length of the segments transmitted.

7. (previously amended) The method of claim 6, wherein the setting step includes:

setting the length of the least significant portion to n bits when the length of the segments transmitted is 2^n bits.

8. (cancelled)

9. (currently amended) A system for transmitting data in a network, the data including a number of segments transmitted in separate packets, the system comprising:

a memory configured to store instructions; and

a processor configured to execute the instructions to:

generate a sequence number including a plurality of portions, at least one portion indicating a particular segment of the data within a file, the at least one portion of the sequence number being based on predictable processing performed by a receiving device and the other portions of the sequence number being generated in accordance with a specification of a relevant transmission protocol,

transmit a data packet including the particular segment of the data and the sequence number to ~~a~~ the receiving device,

receive ~~an~~ a corresponding acknowledgement packet from the receiving device, the acknowledgement packet including an acknowledgment sequence number that is based on the predictable processing of the sequence number in the transmitted packet, and

determine an offset to a next segment of the data in the file to transmit based on one or more portions of the acknowledgment sequence number that correspond to the at least one portion of the associated sequence number.

10. (previously amended) The system of claim 9, wherein the at least one portion of the acknowledgement sequence number includes an incremented version of the at least one portion of the sequence number transmitted to the receiving device and wherein when determining, the processor:

identifies the next segment to transmit based on the incremented at least one portion of the sequence number.

11. (original) The system of claim 9, wherein when transmitting, the processor: transmits the data packet using transmission control protocol/Internet protocol (TCP/IP).

12. (original) The system of claim 9, wherein the processor is further configured to: repeat the transmitting, receiving and determining for additional segments of the data until all the segments of the data have been transmitted and acknowledged.

13. (original) The system of claim 9, wherein when transmitting, the processor: transmits the data packet without storing information identifying the segment being transmitted to the receiving device.

14. (original) The system of claim 9, wherein the plurality of portions includes a first portion, and the processor is further configured to:

set the length of the first portion based on the length of the segments transmitted.

15. (original) The system of claim 14, wherein when setting, the processor is configured to:

set the length of the first portion to n bits when the length of the segments transmitted is 2^n bits.

16. (cancelled)

17. (currently amended) A computer-readable medium having stored thereon a plurality of sequences of instructions, said sequences of instructions including instructions which, when executed by at least one processor, cause said processor to perform the steps of:

generating a sequence number including a plurality of portions, at least one portion identifying a particular segment of data within a file, the at least one portion of the sequence number being based on predictable processing performed by the receiving device and the other portions of the sequence number being generated in accordance with a specification of a relevant transmission protocol;

transmitting a data packet including the particular segment of the data and the sequence number to a receiving device;

receiving ~~an~~ a corresponding acknowledgement packet from the receiving device, the acknowledgement packet including an acknowledgment sequence number that is based on the predictable processing of the sequence number in the transmitted packet; and

determining ~~a~~an offset to a next segment of the data in the file to transmit based on one or more portions of the acknowledgment sequence number that correspond to the at least one portion of the associated sequence number.

18. (previously amended) The computer-readable medium of claim 17, wherein the at least one portion of the acknowledgement sequence number includes an incremented version of the at least one portion of the sequence number transmitted to the receiving device and wherein the determining includes

identifying the next segment to transmit based on the incremented at least one portion of the sequence number.

19. (original) The computer-readable medium of claim 17, wherein the transmitting includes:

transmitting the data packet using transmission control protocol/Internet protocol (TCP/IP).

20. (original) The computer-readable medium of claim 17, including instructions for causing the processor to perform the further steps of:

repeating the transmitting, receiving and determining for additional segments of the data until all the segments of the data have been transmitted.

21. (original) The computer-readable medium of claim 17, wherein the transmitting includes:

transmitting the data packet without storing information identifying the segment being transmitted to the receiving device.

22. (original) The computer-readable medium of claim 17, wherein the plurality of portions includes a least significant portion, the computer-readable medium including instructions for causing said processor to perform the further steps of:

setting the length of the least significant portion based on the length of the segments transmitted.

23. (original) The computer-readable medium of claim 22, wherein the setting includes: setting the length of the least significant portion to n bits when the length of the segments transmitted is 2^n bits.

24. (cancelled)

25. (currently amended) A system for transmitting a data stream as a number of

discrete packets, each packet including a sequence number, the system comprising:

means for generating a sequence number including a plurality of portions, at least one portion identifying a particular segment of the data stream, the at least one portion of the sequence number being based on predictable processing performed by the receiving device and the other portions of the sequence number being generated in accordance with a specification of a relevant transmission protocol;

means for sending a data packet including a first segment of the data stream and the associated sequence number to a receiving device;

means for obtaining ~~an~~ a corresponding acknowledgement packet from the receiving device, the acknowledgement packet including an acknowledgment sequence number that is based on the predictable processing of the sequence number in the transmitted packet; and

means for identifying a next segment of the data stream to transmit based on one or more portions of the acknowledgment sequence number that correspond to the at least one portion of the associated sequence number.

26. (previously amended) A method for transmitting data packets, each packet including a sequence number and a data segment, comprising:

generating an associated sequence number for a given data segment, the associated sequence number including a plurality of portions with at least one portion of the sequence number based on processing to be performed by a receiving device, the at least one portion generated to identify after the processing the data segment that is to be included in a next data packet, and at least one other portion of the sequence number based on a relevant protocol specification; and

transmitting a data packet including a data segment and the associated sequence number to a receiving device.

27. (previously amended) The method of claim 26, further comprising:

receiving an acknowledgement packet from the receiving device, the acknowledgement packet including an acknowledgment sequence number that includes at least one portion that corresponds to the at least one portion of the corresponding sequence number;

and

determining a next data segment to transmit based on the at least one portion of the acknowledgment sequence number.

28. (cancelled)

29. (previously amended) A system for transmitting data packets, each packet including a sequence number and a data segment, the system comprising:

a memory configured to store instructions; and

a processor configured to execute the instructions to:

generate at least one portion of the sequence number based on processing to be performed by a receiving device the at least one portion being generated to identify after the processing the data segment that is to be included in a next data packet,

generate at least one other portion of the sequence number based on a relevant protocol specification, and

transmit a data packet including a data segment and the sequence number to a receiving device.

30. (previously amended) The system of claim 29, wherein the processor is further configured to:

receive from the receiving device an acknowledgement packet that includes an acknowledgment sequence number, and determine a next data segment to transmit based on the at least one portion of the acknowledgment sequence number.

31. (cancelled).

32. (currently amended) A computer-readable medium that stores instructions executable by one or more processors to perform the steps of:

generating at least one portion of the sequence number based on predictable processing to be performed by a receiving device the at least one portion being generated to

identify the data segment that is to be included in a next data packet after the processing;

generating at least one other portion of the sequence number based on a relevant protocol specification;

transmitting a data packet including a data segment and the sequence number to a receiving device.

33. (previously amended) The computer-readable medium of claim 32, including instructions for causing said processor to perform the further steps of:

receiving an acknowledgement packet from the receiving device, the acknowledgement packet including an acknowledgment sequence number; and

determining a next data segment to transmit based on the at least one portion of the acknowledgment sequence number.

34. (cancelled).

35. (currently amended) A method for transmitting a data stream in a number of discrete packets, each packet including a segment of the data stream and a sequence number field, the method comprising:

partitioning the sequence number field into a plurality of portions;

generating a sequence number corresponding to the plurality of portions, at least one portion identifying a particular segment of the data stream, the at least one portion of the sequence number being based on predictable processing performed by the receiving device and the other portions of the sequence number being generated in accordance with a specification of a relevant transmission protocol; and

transmitting a data packet including the particular segment of the data stream and the sequence number to a receiving device.

36. (cancelled)

37. (currently amended) A method for transmitting a data stream in a number of discrete packets, each packet including a segment of the data stream and at least one header field, the method comprising:

partitioning the header field into a plurality of subfields;

generating a value for the header field in accordance with a transmission control protocol, and including at least one subfield that identifies a particular segment of the data stream the at least one subfield being based on predictable processing performed by a receiving device to provide in a return transmission from the receiving device information from which the data segment to be transmitted in a next packet can be determined; and

transmitting a data packet including the particular segment of the data stream and the header field to ~~a~~ the receiving device.

38. (previously amended) The method of claim 37, further comprising:

receiving an acknowledgement packet from the receiving device, the acknowledgement packet including a modified version of the header field; and determining a next data segment to transmit based on the value of the bits that correspond to the at least one subfield in the modified version of the header field.

39. (currently amended) A device for transmitting a data stream in a number of discrete packets, each packet including a segment of the data stream and at least one header field, the device comprising:

logic configured to partition the header field into a plurality of subfields;

logic configured to generate a value for the header field in accordance with a transmission control protocol, and including at least one subfield that identifies a particular segment of the data stream the at least one subfield being based on predictable processing performed by a receiving device to provide in a return transmission from the receiving device information from which the data segment to be transmitted in a next packet can be determined; and

logic configured to transmit a data packet including the particular segment of the data stream and the header field to ~~a~~ the receiving device.

40. (previously amended) The device of claim 39, further comprising:

logic configured to receive an acknowledgement packet from the receiving device, the acknowledgement packet including a modified version of the header field; and

logic configured to determine a next data segment to transmit based on the value of the bits that correspond to the at least one subfield in the modified version of the header field.

41. (currently amended) A method for transmitting a data stream in a number of discrete packets, each packet including a segment of the data stream and at least one header field, the method comprising:

providing a first function to generate the header field in compliance with a transmission control protocol;

generating the header field using the first function and including in the header field information that represents an associated file offset the information being generated based on predictable processing performed by a receiving device;

transmitting to ~~a~~ the receiving device a data packet including the segment of the data stream that corresponds to the offset within the file and the header field;

receiving an acknowledgement packet from the receiving device, the acknowledgment packet including a file offset value that is based on the predictable processing of the associated file;

applying a second function to a portion of the acknowledgement packet corresponding to the header field; and

identifying file offset information relating to a next data segment from results of applying the second function.

42. (original) The method of claim 1, wherein the data represents at least one of a data file, a data message and application generated data.

43. (original) The system of claim 9, wherein the data represents at least one of a data file, a data message and application generated data.

44. (original) The computer-readable medium of claim 17, wherein the data represents at least one of a data file, a data message and application generated data.